

based competing xDSL services demonstrate the financial and technical ability to provide choice to residential and business customers.

In this case, the Commission faces a familiar set of conflicting goals. The advancement of new telecommunications services must be balanced against the goal of encouraging competition. Congress designed the Telecommunications Act of 1996 to provide an interlocking set of incentives for today's monopolies to open their networks and become tomorrow's competitors. The essential challenge for the Commission is simultaneously to keep those incentives in place while removing unhelpful regulation.

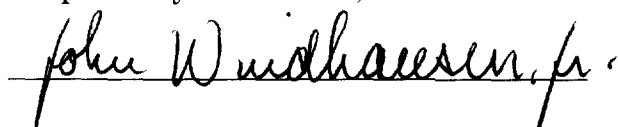
Two elements of the relief sought by the Petitioners could collide with the scheme enacted by Congress. First exempting high speed data services from the interLATA restriction outside the section 271 process undoubtedly reduces the market-opening incentive provided to the RBOCs. The issue will turn on whether it is possible to distinguish broadband data traffic from circuit switched traffic *and maintain that distinction*. The technological merger of voice and data makes this problem even more difficult. Stated simply, the Commissioner must determine whether the proposed interLATA relief for data services is legal and necessary to provide the correct incentives to deploy advanced services. If legal, the Commission must decide whether this exemption is enforceable and whether it leaves in place a sufficient incentive (under section 271) for the RBOCs to provide non-discriminatory access to competitors.

Second, the requested removal of xDSL services from the unbundling and

resale requirements of section 251 must be closely examined to determine the effect on competition in these services and the services, like basic voice service, that use common facilities. Here again, the merger of voice and data and the future relationship between data networks and circuit-switched networks becomes central. The Commission must decide whether it is possible realistically to compete with an incumbent LEC if xDSL services are not available as unbundled elements. The investigation must consider the developing relationship of today's circuit-switched services to tomorrow's hybrid services such as "voice on the net." The inquiry must look at the future architecture of the local telephone network and its relationship to data networks.

These are worthy questions. CPI looks forward to additional opportunities to comment on these matters as the Commission undertakes its inquiry under section 706 of the Telecommunications Act.

Respectfully Submitted,

A handwritten signature in black ink, reading "John Windhausen, Jr.", written over a horizontal line.

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April 6, 1998

ATTACHMENT A

ADSL

ADSL Trials and Service Deployments

[United States](#) | [Europe](#) | [Canada](#) | [Latin America](#) | [Middle East/Africa](#)
[Asia/Pacific](#) | [Multi-tenant Buildings & Other ADSL Installations](#)

Revised: February 10, 1998

You may also download a copy of this matrix in Excel by clicking [HERE](#)

UNITED STATES:					
Company	Location	Speed	Applications	Trial Dates	Service Deployment
Advanced Corporate Solutions	Pacific Northwest	Down*: up to 2.5Mbps; Up: up to	Internet/LAN Access, Video Streaming,	N/A	Service Rolled out April 1997

(NSP) (see Transport Logic on next page)		1Mbps	Desktop Video, E-Commerce, Telecommuting		
ALLTEL (CLEC & ISP)	Dalton, GA and Hudson, OH	Down: 1.5 Mbps; Up: 64 kbps	Internet/LAN Access	Tech/Mkt Trial: Sept. 96 to Feb. 97 Phase 2: Begins 2nd Quarter 97	Not Announced
	Harrison, Ark.		Internet/LAN Access	Mkt Trial: Nov. 97 to June 98	
Ameritech (ILEC)	Ann Arbor, MI	Down: 1.5 Mbps; Up: 128 kbps	Internet/LAN Access	N/A	Limited Rollout in Ann Arbor in Dec. 97; to be expanded to Chicago area in mid-1998; plans to make ADSL available to 70% of customers by the year 2000
Ameritech and IBM	Wheaton, IL (Chicago)	Down: 1.5Mbps; Up: 64kbps	Internet/LAN Access	Concept Trial: Oct. 96 to Apr. 1997	
AUSNet Services (ISP)	Portland, OR	Down*: 2.6-7 Mbps; Up: 92-972 kbps	Internet/LAN Access		February 97
Bay Junction Technology, Inc. (ISP)	San Jose, CA	Down: 1.5 Mbps;	Internet/LAN Access	N/A	December 97 rollout
Bell Atlantic (ILEC)	Northern Virginia	Down: 1.5 Mbps; Up: 64 kbps	Internet Access	Mkt Trial: Sept. 1996-Ongoing	Rollout in mid-1998 of RADSL service up to 7 Mbps downstream
	Fairfax County, VA	Down: 1.5 Mbps; Up: 64 kbps	Video on Demand	Mkt Trial: May 95 - late 96	
Bell Atlantic & Carnegie-Mellon Univ.	Pittsburgh, PA	Down: 1.5 Mbps; Up: 64 kbps	Telemedicine, Distance Learning, "Net/LAN Access"	July-Feb 1998	
BellSouth (ILEC)	Atlanta, GA	Down: 6 Mbps; Up: 64 kbps	Internet/LAN Access, Telecommuting	Tech Trial: Oct. 95-Ongoing	Widescale deployment in 1998
	Birmingham, AL	640 kbps		Mkt Trial: Oct. 97-May 98	
Branch Internet Services (ISP)	Ann Arbor, MI	Down*: Up to 2 Mbps; Up: 1 Mbps	Internet/LAN Access, Desktop Video Conferencing	June 1 - July 15, 1997	August 1997
Cincinnati Bell (CLEC/ISP "Fuse")	Cincinnati, OH	Down*: 1.5Mbps-6Mbps; Up: 150kbps - 400kbps	Internet/LAN Access	Jan. 97-Ongoing	Trial to be expanded significantly in Jan. 98 w/150 lines available for ISPs and corporate intranets
CommTel (independent telephone co.)	Winthrop, Maine	Down: 7Mbps; Up: 1Mbps	Internet and Live Video	Dec. 97 - Feb. 98	Company expects to have first customers connected by year-end '98
Concentric Network Corp. (ISP)	10 cities in Northern California	Down: 1.5Mbps; Up: 384kbps or 384kbps in both directions	Internet/LAN Access	N/A	Launched ADSL in 10 Northern California cities in November 1997
Covad Communications Inc. (CLEC)	San Francisco Bay Area and Silicon Valley	Down: 144kbps-1.5Mbps	Internet/LAN Access	N/A	Launched ADSL in Dec. 1997 available to 400,000 homes, businesses; other US markets to be added in 1998
DNAI (ISP)	Danville, San Ramon and Silicon Valley	Down: 1.5Mbps; Up: 384kbps or 384kbps in both directions	Internet/LAN Access	N/A	Launched ADSL in Dec. 1997
Dakota Services Limited (CLEC/NSP)	Milwaukee, WI	Down*: up to 2.5Mbps; Up: 1Mbps in both directions	Internet/LAN Access		July 1997
easy.net (ISP)	Denver, CO	Down*: 640kbps-2.5Mbps; Up: 272kbps-1Mbps	Internet/LAN Access, Multimedia, Telecomm., Distance Learning	N/A	August 18, 1997; speeds up to 7Mbps expected to be available soon
GTE Communications Corp. (newly formed CLEC Subsidiary)	Southern Calif. (Marina del Rey)	Business Down*: 1.5 Mbps; Up: 384 kbps Residential Down: 680kbps; Up: 256kbps	Internet/LAN Access		GTE Com. commercially deployed ADSL Mid. Nov. 1997 in So. Calif. and will offer ADSL in "numerous key Markets" throughout the US in 1998; GTE Network Services plans to convert its ADSL trials into
GTE Network Services	Irving, TX (Dallas/Ft. Worth)	Down: 1.5 Mbps; Up: 64 kbps	Internet/LAN Access	Mkt Trial: Feb. 96	
GTE & Microsoft	Redmond, WA	Down: up to 6 Mbps;	Telecommuting/Net	Mkt Trial:	

GTE & Duke University	Durham, NC	Up: 384 kbps Down: up to 6 Mbps; Up: 384 kbps	Access Internet/LAN Access	Feb. 96-Ongoing Mkt Trial: Nov. 96	its ADSL trials into full-scale commercial deployment in first quarter 1998
GTE & Purdue University	Lafayette, IN	Down: up to 6 Mbps; Up: 384 kbps	Internet/LAN Access	Mkt Trial: Nov. 96	SDSL services converted to rate-adaptive ADSL in 4th Quarter 1997
Harvard Net (ISP, CLEC)	Major Metropolitan in Mass., Maine & NH	Down*: 128-768kbps; Up:	Internet/LAN Access		SDSL services converted to rate-adaptive ADSL in 4th Quarter 1997
Intelcom Data Systems (ISP)	Rhode Island	Down*: 640kbps-2.5Mbps; Up*: 275kbps-1.08Mbps	Internet/LAN Access, Video Streaming, Desktop Video Conferencing, Telemedicine	N/A	March 1997 in Rhode Island; plans to expand to other NE areas
InterAccess (ISP)	Chicago, IL	Down*: 1.5 Mbps; Up: 64 kbps	Internet Access	N/A	Sept. 1996
Interstate Telephone	Westpoint, GA	Down*: up to 7Mbps; Up: up to 1Mbps	Internet/LAN Access w/VPN	N/A	4th Quarter 1997
ionNET Inc. (NSP)	Oklahoma City and Tulsa	Down*: up to 7 Mbps; Up: up to 1Mbps	Internet/LAN Access	N/A	Mid-summer 97 in Oklahoma City and Tulsa Kansas City, Little Rock, Austin, Dallas, Houston & San Antonio soon thereafter
LEACO Rural Telephone Cooperative	Schools in Southeastern New Mexico		Internet Access	N/A	Began providing ADSL service for SE New Mexico schools in late July 1997
MCI Comm Corp. (IXC), with partners NW Iowa Telep. & NW Iowa Power Cooperative	Iowa	Down*: 7Mbps; Up: 640 kbps or 786 kbps in both directions	Internet/LAN Access	See entry below for trial information	Aug 1997 in Iowa; will add rural areas in 10 states; nationwide by early 1998
MCI Comm. Corp. (IXC)	Sergeants Bluff, Iowa	Down: 1.5-6 Mbps; Up: 64 kbps Down: 7Mbps; Up: 640kbps	Internet/LAN Access	April 1997-Ongoing; also conducting trials in New York City and Detroit	See entry above for service deployment information
Network Access Solutions (CLEC)	Mid-Atlantic Region	Down: up to 6 Mbps	Services to ISPs		Feb. 1997; rolling out to other regional markets throughout 1997
Northland Comm. (CLEC & ISP), through affiliate Onedia County Telephone	New York (Holland-Patent Central Schools)	Down: 1.5 Mbps; Up: 64 kbps	Internet/LAN Access	Tech. Trial: Feb. 1997	Plans to offer service to greater Utica/Rome and Syracuse later this year
NYNEX (ILEC) and Lotus (NYNEX merged with Bell Atlantic)	Boston, MA	Down: 1.5 Mbps; Up: 64 kbps	Internet/LAN Access	Aug. 96-Ongoing	By January 1998
OneNet Communications, Inc. (ISP)	Downtown Cincinnati, OH		Internet/LAN Access		Service launched December 1997
SBC Communications, Inc. (ILEC) (through telephone subsidiaries Pacific Bell and Southwestern Bell)	San Francisco Bay Area and Austin, TX	Bus. Down: 1.5Mbps; Up: 384kbps/Consumer 384kbps in both directions	Internet/LAN Access	See the two entries below	Limited rollout Nov. 97 in San Francisco Bay Area, CA (Pacific Bell); and in Austin, TX (Southwestern Bell)
Pacific Bell (ILEC)	San Ramon, CA	Down: 6 Mbps; Up: 640 kbps	Internet Access/VoD	Aug. 96-Ongoing	
SBC Comm. (ILEC) and Shell Oil	Houston, TX	Down: 6 Mbps; Up: 640 kbps	Internet/VoD	Tech Trial: May 96-Ongoing; Mkt Trial: 7/96	
Signet Partners (ISP)	Austin, TX	Down: up to 6 Mbps	Internet/LAN Access		Austin in Jan. 1997; Houston and San Antonio by June 1997

Slip.Net (ISP)	Silicon Valley, CA	Down: 1.5Mbps; Up: 384kbps also 384kbps and 1.1Mbps in both directions	Internet/LAN Access	N/A	Launched Dec. 1997n Silicon Valley; San Francisco slated for Jan. 1998 rollout, with rest of Bay Area by mid-1998
Sprint (IXC)	Charlottesville, VA		Internet/LAN Access		Tested ADSL by extending hospital's LAN and Internet access to several doctors' offices for transfer of critical, high-resolution medical image files
Transport Logic (ISP), in conjunction with Advanced Corporate Solutions	Portland, OR	Down*: 640kbps-2.5Mbps; Up*: 275kbps-1.08Mbps	Internet/LAN Access	N/A	Apr. 97 for Portland; 4 more WA and OR cities by end of May
US West Enterprise (ILEC)	40 cities in 14 states by June 1998	Down*: 4Mbps; Up: 1Mbps, or Down*: 1Mbps; Up: 1Mbps	Internet/LAN Access	Tech trial ends Dec. 31, 1997	Plans to deploy ADSL services in more than 40 cities in 14 states during the first half of '98 for 5 million customers
	Phoenix, AZ	192kbps, 320kbps, 704kbps (HDSL)	Internet/LAN Access	N/A	Oct. 97-offering HDSL as a tariffed service
Vitts (CLEC)	New Hampshire	Down: Up to 6Mbps	Internet/LAN Access, Video on Demand, Teleconferencing	N/A	Plans to expand to all of New England and New York
World Wide Internet Services Provider (ISP)	Birmingham, AL	Down*: Up to 6Mbps; Up: Up to 640kbps	Internet/LAN Access	Mkt Trial: Began Jan. 1998	Began offering ADSL service in Jan. 1998 as part of BellSouth's market trial

* Rate-adaptive ADSL

CANADA:

Company	Location	Speed	Applications	Trial Dates	Service Deployment
BC Tel (CLEC)	Greater Vancouver and Victoria, BC	Down*: 1.5-8 Mbps; Up: 64-640 kbps	Internet/LAN Access, Video Conferencing, Telecommuting	Tech/Mkt Trial: Nov. 96 - Nov. 97 Mkt Trial: Sept. 1997	Announcement expected by year-end 97
Bell Canada (ILEC)	Ottawa/Hull & Quebec City Areas	Down: 2.2 Mbps; Up: 1 Mbps	Internet/LAN Access	Customer Trial: Sept. 96-Ongoing in Kanata, ON and St. Bruno, Quebec	October, 1997 rollout in Ottawa/Hull & Quebec City areas to ISPs; will offer to businesses in 1998 and expand to Montreal and Toronto markets
CADvision (ISP)	Calgary, Alberta	Down*: 2.56 Mbps Up: 1 Mbps	Internet Access		Services launched Nov. 1996
City Tel	Prince Rupert, BC		Internet/LAN Access, Streaming Video, Distance Learning, Telemedicine and VoD	N/A	Service rolled out November 1997 with 1000 lines
Manitoba Tel Sys (MTS)	Winnipeg, Manitoba	Down: 1.5 Mbps; Up: 64 kbps	Internet Access, Multimedia, Interactive Video, VoD	Tech Trial: Nov 1996-Ongoing	December 15, 1997; by year-end 1998 90% of Winnipeg customers will be able to receive ADSL services
Maritime Tel. & Tel (MT&T)	Halifax, Nova Scotia	Down: Up to 7 Mbps	Internet Access	Tech Trial: Apr 1997-Ongoing	Nov. 1997 limited deployment
New Brunswick Telephone Co.	St. John, Fredericton & Moncton	Down: 1.5 Mbps; Up: 64kbps	Internet Access	Tech Trial: Dec. 1996-Ongoing	Second Quarter 1997
QuebecTel	>Quebec	Down*: 640kbps-2.2 Mbps; Up: 272kbps-1 Mbps	Internet Access/LAN Access, VoD; Distance Learning		Services launched Sept. 1997
SaskTel (CLEC)	Regina, Saskatoon & Prince Albert	Down: 1.5 Mbps; Up: 64 kbps	Internet Access	N/A	Limited services launched Nov. 1996 in Regina & Saskatoon. Prince Albert added in Jan. 1998
Telus Comm.	Edmonton and Calgary, Alberta	Down: 1.5Mbps; Up: 64kbps	Internet/LAN Access	Mkt Trial: Mar 1996-Ongoing	Oct.97; projects up to 2,500 subscribers by mid-1998

LATIN AMERICA:

Company	Location	Speed	Applications	Trial Dates	Service Deployment
Companhia de Telefones do Brasil Central (CTBC)	Brazil	Unknown	Internet/LAN Access	Trial currently underway	Sometime in 1997
Telebahia (Brazil), a subsidiary of Telebras holding company	Brazil	Up to 2 Mbps	Internet/LAN Access	Began trial in 1998	ADSL pilot project began Jan. 1998; other subsidiaries of Telebras holding co. will soon test ADSL as well
Telefonica de Argentina	Argentina	Unknown		Trials currently underway	

EUROPE:

Company	Location	Speed	Applications	Trial Dates	Service Deployment
AMUSE**	Milan, Italy (Telecom Italia)	Down: 8.2 Mbps; Up: 640 kbps	VoD/Internet Access	Tech Trial began early 1997	
Belgacom (Belgium)	Antwerp, Brussels, Liege, Louvain & Mechelen	Down: 8Mbps; Up: 600kbps	Video on Demand, Internet/LAN Access	Market Trial begins Jan. 1998 with 1,000 customers	Not announced
British Telecom (UK)	Colchester & Ipswich (West London)	Down: 2 Mbps; Up: 384 kbps	Interactive Multimedia Services (VoD, etc.)	VoD/Interactive Multimedia Mkt Trial: Aug95-96; Data Mkt Trial Jan-June 1998	2000 homes & businesses to participate in latest market trial; next stages to be announced with Alcatel & Fujitsu in '98
Deutsche Telekom AG (Germany)	Nuremburg		Video and home shopping Internet Access & VoD	Pilot project began late summer 1997	Not yet announced; also conducting field trial of VDSL from 13-26 Mbps in both directions.
	North Rhine-Westphalia			Late September 1997	
DT/Westfälische Wilhelms-Universität	Münster/Westfalen				
France Telecom (France)	Brittany	Down: 8 Mbps; Up: 640 kbps	Video on Demand	Mkt Trial: Nov. 96	Not announced
	Lannion		Multimedia, Digital TV and VoD		
Helsinki Telephone Co. (Finland)	Helsinki	Down: 2 Mbps; Up: 9.6 kbps	Internet/LAN Access, multimedia, 3D virtual city, 'Net' phones and live video	Aug. 95 - Mar. 96	Began limited rollout Feb. 1997 in Helsinki. There could be 20,000 xDSL users by the year 2000.
Kingston Comm. - Hull (UK)	Hull		Video on Demand	Mkt Trial: Fall 97	Not announced
PTT Telecom (Holland); working w/Surfnet (ISP) & NOB Broadcasting	Amsterdam, Holland		Internet/LAN Access and VoD	Tech Trial: Dec. 1997-May 1998	Not announced
Swisscom (Switzerland)	Grenchen	Down: 2 Mbps; Up: 9.6 kbps	VoD/Internet Access	Sept. 95-Ongoing	Market trials set to begin in Zurich, Geneva & 3 other Swiss cities in 1998
Telecom Eireann (Ireland)	Ireland	Down/Up: 2 Mbps (HDSL)	Internet/LAN Access		Not Announced
Telecom Finland (Finland)	Finland		Internet/LAN Access	ADSL Trials to start soon	Beginning installation of ADSL equipment
Telecom Italia (Italy)	Turin	Down: 640 kbps to 2.24 Mbps; Up: 272 kbps to 1 Mbps	Internet Access and Video conferencing	Tech Trial: began early 1997; deployed in 15 central offices so far	Projects 1.5 million users by the end of year 2000 as part of Torino 2000
Telefonica Espana (Spain)	Madrid & Barcelona	Down: 6Mbps; Up: 640kbps	Internet Access, Telenetworking, On-line services	Beginning Dec. 1997	Not yet announced
Telenor A/S (Norway)	Oslo		Video on Demand	Jan. 96	
Telia AB (Sweden)	Stockholm		Internet Access	Sept. 95	December 1997

MIDDLE EAST/AFRICA:

Company	Location	Speed	Applications	Trial Dates	Service
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Company	Location	Speed	Applications	Trial Dates	Deployment
Bezeq (Israel Telcom)	Tel Aviv and Jerusalem	Down: 2 Mbps; Up: 9.6 kbps	Video on Demand	Tech Trial: April 96-Ongoing	

ASIA/PACIFIC:

Company	Location	Speed	Applications	Trial Dates	Service Deployment
Chunghwa Telecom (Taiwan)	Central Taipei	Down: 1.5 Mbps; Up: 9.6 kbps	Near VoD/Remote Access	Mkt Dec. 96-Ongoing	
Hong Kong Telecom (Hong Kong)		Down***: 51 Mbps; Up: 1.5 Mbps	Video on Demand	VoD: Summer 1996	Commerical rollout in July 1997; telco projects 250,000 users by year 2000
Ina-AINET (Agric. Assoc. of Ina City) w/Japanese UNIX Bus. Association (UBA), in partnership with Sun Microsystems, NEC, KDD, Sumitomo, Shinshu Univ. Community Area Network	Ina City, Nagano Prefecture	Down*: Up to 2.2 Mbps; Up: Up to 1 Mbps	Internet/LAN Access, Remote Learning, Video over IP	Sept. 1997-Ongoing	Not yet announced
Korea Telecom (Korea)	Six cities including Pusan	Down: 4Mbps; Up: 128kbps	VoD/Internet/Distance Learning/Shopping	Mkt Trial: Aug. 96	Commerical rollout in early 1998; telco projects 3.5 million users by year 2000
NEC Corp. (project in China)	Shantou, Guangdong	Unknown	Internet Access/VoD	NEC plans to build an experimental multimedia network	Not Announced
Nippon Telegraph & Telephone (NTT)	Japan		Internet Access	February 1998 - November 1998	NTT will start testing ADSL in Feb. 1998 with about 15 major ISPs
Singapore Telecom (Singapore)	5,000 homes there by year-end 1997	Down: 5.5 Mbps; Up: 168 kbps	VoD/Internet	Tech Trial: Feb. 96; Commerical trial began June 97	Island-wide rollout by the end of 1998; projects 80,000 subscribers by then
Telecom New Zealand	Wellington			Trial Currently underway	Not announced
Telstra Corp. Ltd. (Australia)	Melbourne	Down: 2 and 6 Mbps	Live Broadcasts, VoD, Interactive Entertainment	Mkt Pilot: Apr.-Oct. 96	Second Half of 1997

MULTI-TENANT BUILDINGS & OTHER ADSL INSTALLATIONS:

Company	Location	Speed	Applications	Trial Dates	Service Deployment
American Information Systems (ISP) & The John Buck Company	Evanston, IL	Down: 1.5Mbps; Up: 64kbps	Internet/LAN Access	N/A	First deployed at luxury high-rise apartment building; other JBC properties to follow
DualStar Communications & TCG	Manhattan, NY	Down: 7Mbps; Up: 1Mbps	Internet/LAN Access	N/A	Rolled out in West End Towers
GTE Communications Corp. (newly formed CLEC subsidiary)	Southern California (Marina del Ray, CA)	Business Down*: 1.5Mbps; Up: 384kbps; Residential Down: 680kbps; Up: 256kbps	Internet/LAN Access	See GTE entry for trial information	GTE Com. Commerically deployed ADSL mid-Nov. 1997 in Southern Calif.
GTE Government Services		Down: 1.5Mbps; Up: 64kbps; Down*: 640-2.2Mbps; Up: 272kbps to 1.08Mbps	Internet/LAN Access	N/A	Deployment August 1997 at U.S. military bases around the world
ITT Sheraton Corp.	Sydney, Australia		Internet/LAN Access, VoD	N/A	Began service December 1 in Sydney, Australia, with a rollout throughout the Asia-Pacific beginning Feb. 1998; other properties in Europe, the Middle East, the Americas and Africa to follow
Televideo, Inc.	New York City		Video on Demand and other interactive	N/A	Rolled out in high-rise apartment building February 1997

Thorn Communications (ISP; filed for CLEC status) & Newmark Real Estate	Manhattan, NY "Silicon Alley"	Down*: 2.56 Mbps	multimedia Internet/LAN Access	N/A	Deployed in select office buildings in the downtown Manhattan financial district
Trump Organization & FreelinQ	Trump Tower in New York City	Down: 6 Mbps; Up: 640 kbps	Internet/LAN Access, Audio and Video on Demand	N/A	Deployed Oct. 1997 in Trump Towers

* Rate-adaptive ADSL

**AMUSE is the European Commission's Advanced Multimedia Services to Residential Users (AMUSE) cooperative program.

***VDSL

Legend:

CLEC Competitive Local Exchange Carrier

ISP Internet Service Provider

IXC Interexchange Carrier

NSP Network Service Provider

RBOC Regional Bell Operating Company

ILEC Incumbent LEC

VPN Virtual Private Networking

Note: This table is compiled from information obtained or derived from sources believed to be accurate (e.g., company press releases, executives' speeches and news stories), but the ADSL Forum does not guarantee the accuracy or completeness of the information nor shall it be liable for any errors in or omissions from the information or actions taken in reliance thereon.

Certificate of Service

I, John Windhausen, hereby certify that on this 6th day of April, 1998, copies of the foregoing Comments of the Competition Policy institute were served by hand or by first-class, United States mail, postage prepaid, upon each of the following:

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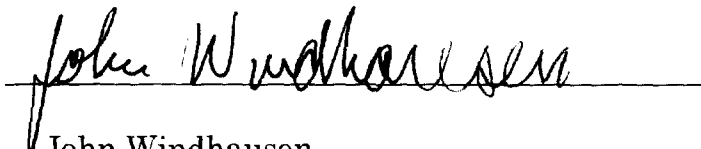
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